ADAPTING BRONFENBRENNER BIOECOLOGICAL MODEL AT THE PRESCHOOL WITHIN THE DOUBLE STOREY RESIDENTIAL BUILDING

NURUL NADIAH BINTI SAHIMI

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy

Faculty of Built Environment
Universiti Teknologi Malaysia

MARCH 2016

To Mama Siti with love,

Naily, Leia and Adele who I dearly love…

ACKNOWLEDGEMENT

I wish to express my sincere appreciation to my supervisor, Assoc. Prof. Dr. Ismail Said for his guidance and encouragement throughout my study. Also I would like to express my gratitude to Prof. Dr. Putri Zabariah Megat Abdul Rahman and Prof. Dr. Bustam Kamri for their guidance and motivation and for believing in me.

I appreciate those people who have been with me all these years, whom has taught me by showing me their endless love to children. Mama Siti, Aunty Radziah and Aunty Asmah, without your guidance and love I would not have experienced and create such wonderful moments with the children all these years and for many years to come.

I endlessly thanked my husband and parents for being very patience with me and for believing that I will be able to complete this journey. All of you have been very supportive and consistently giving me strength to move on in my life. Lastly, I would like to thank those who have been supportive of me throughout my journey in obtaining my PhD especially to Noraini, Mega, Bukar, the Greenovation team and other close friends for their endless support. Your advices and ideas has helped me to undertand the field of architecture and made it able for me to apply it in the field of early childhood education.

ABSTRACT

With the release of TASKA and TADIKA 2012 Guideline, privately-owned preschool operators are allowed to operate their preschool at a residential building. However, the conversion of a residential building into an institutional building could affect the quality of childhood education due to limited classroom space. In most cases, classroom settings proposed by researchers such as the learning pockets could not be used as the number of children located in a classroom is quite high. However, quality education can still be afforded if children have a sense of place in the classroom. Suitable classroom settings could offer children a place for privacy, especially if chosen by children themselves as it will allow children to feel belonged to the space. Hence, this study investigates the elements and attributes of interaction to seek for possible preschool classroom setting in small spaces through children's active participation by revisiting Bronfenbrenner bioecological model. Forty five (N=45) children age 5 (n=20) and 6 (n=25) in a preschool in Kuala Lumpur were involved actively through lessons on 'Classroom Design' using the Inquiry Based Approach. Through active interaction and engagement, children have obtained the understanding about interior designing and classroom settings. The activities have allowed them to redesign and rearrange their classroom based on their preferences with practical considerations on its suitability and safety elements. Results were retrieved from the analysis of children's words and behavior during the inquiry session. Children's recorded words were transcribed and their video-recorded behaviors during classroom arrangement were categorized into three main elements, (i) furniture arrangement patterns, (ii) seat selection, and (iii) ingress and egress behavior. Observation showed that children's sense of place in a classroom was at their seating place and at the common area. Children were observed to have preferred to be seated together as a whole group with the opportunity to select their own seat instead of being clustered. This shows the need for intimacy interaction between children and the classroom community. Over time, although there are limited classroom space, children's sense of acceptance and belonging to the classroom and the preschool could still be developed as stated in the Bronfenbrenner formula of development.

ABSTRAK

Garis Panduan TASKA dan TADIKA 2012 telah menyediakan satu platfom rujukan kepada pengusaha prasekolah dalam perlaksanaan operasi bagi taska dan tadika di bangunan kediaman. Perubahan fungsi bangunan kediaman kepada institusi pendidikan didapati memberikan kesan kepada kualiti pendidikan memandangkan ia mempunyai ruang kelas yang terhad. Dalam kebanyakan kes, ruang pembelajaran yang dicadangkan oleh penyelidik seperti sususan tertutup atau *learning pockets* tidak dapat digunakan disebabkan oleh bilangan kanak-kanak di dalam kelas adalah tinggi. Namun begitu, pendidikan berkualiti masih mampu diadaptasikan sekiranya kanak-kanak ini memiliki rasa kepunyaan atau *sense of place* terhadap ruang pembelajarannya didalam kelas. Berdasarkan kajian, susunan ruangan kelas yang bersesuaian mampu menawarkan tempat peribadi atau *private places* kepada individu kanak-kanak melalui pemilihan individu kanak-kanak itu sendiri. Justeru itu, kajian ini menyelidik elemen dan artribut interaksi bagi mengenalpasti penyusunan ruangan yang bersesuaian khususnya ruang terhad menerusi penglibatan kanak-kanak berdasarkan Model Bioekologi Bronfenbrenner. Bagi tujuan tersebut sejumlah empat puluh lima (N=45) kanak-kanak prasekolah di Kuala Lumpur yang berusia 5 (n=20) dan 6 tahun (n=25) terlibat aktif dengan pembelajaran berkaitan topik 'Rekabentuk Kelas' menggunakan pendekatan pedagogi *Inquiry*. Berdasarkan interaksi ini, ia akan melahirkan tahap kefahaman kanak-kanak berkaitan keberkesanan susunan atur kelas. Justeru itu melalui aktiviti tersebut ia membolehkan penglibatan lansung kanak-kanak dalam merekabentuk dan menyusun tempat belajar dikelas berdasarkan keperluan mereka dengan mengambil kira aspek keselamatan. Keputusan diperolehi menerusi analisa yang dijalankan terhadap tingkahlaku dan perbualan kanak-kanak. Proses ini dirakam dan direkodkan secara bertulis sewaktu susun atur kelas dijalankan dan ia dikategorikan kepada tiga elemen utama, (i) susunan perabot, (ii) pemilihan tempat duduk, dan (iii) tingkahlaku keluar masuk kanak-kanak. Pemerhatian menunjukkan bahawa kecenderungan pemilihan lokasi tempat duduk atau *sense of placeness* oleh kanak-kanak di kelas adalah bergantung kepada tempat duduk bahkan ia dipengaruhi oleh faktor 'ruang bersama' atau kumpulan. Pemerhatian juga mendapati bahawa berdasarkan proses susun atur kelas yang di ubahsuai kanak-kanak ini lebih cenderung untuk duduk di dalam satu kumpulan yang besar berbanding kelompok kecil. Proses ini dilaksanakan dengan memberi peluang kanak-kanak memilih tempat duduk mereka sendiri. Ini jelas menunjukkan bahawa terdapat keperluan terhadap interaksi hubungan rapat di antara kanak-kanak. Dalam jangkamasa tertentu, dicatatkan walaupun ruang kelas adalah terhad, ia sebenarnya mampu membentuk perasaan penerimaan dan kepunyaan di dalam diri kanak-kanak terhadap kelas dan prasekolah mereka seperti yang dijelaskan oleh formula perkembangan Brofenbrenner.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

ACECQA	-	Australian Children's Education and Care Quality authority
ECEC	-	Early Childhood Education and Care
gsf/c	-	Gross square feet per child
IBA	-	Inquiry based approach
ISKL	-	International School Kuala Lumpur
KPK	-	National Preschool Curriculum
KSPK	-	National Standard Preschool Curriculum
LINUS	-	Literacy and Numeracy Screening
MOE	-	Ministry of Education
MWFCD	-	Ministry of Women, Family and Community Development
NAEYC	-	National Association for the Education of Young Children
OECD	-	Organization for Economic Co-operation and Development
PPK	-	Curriculum Development Centre
RO1	-	Research Objective 1
RO2	-	Research Objective 2
RO3	-	Research Objective 3
SF/C	-	Square feet per child
SME	-	Subject matter expert
ZPD	-	Zone of proximal development

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter addresses the background of the study, research aim, objectives, research questions, significance of the study, research problems, gaps, scope of the study and the overall structure of the thesis.

1.2 Research Background

Over the years, the family system has changed gradually as both parents are becoming breadwinners to the family. The Tenth Malaysia Plan (2011-2015) has revealed a rise from 18.8% in 2004 to 30.5% in 2010 of women in the management positions in the public sector. In the private sector, the percentage doubled from 13 percent to 26.2 percent in the same period of time. To date, a total of 52.4% of women has enrolled in the working force (NKRA (KPWKM), 2014) which is due to the desire of bringing up the family status into the middle class bracket (Gomez, 2014 in The Malaysian Insider). As further reported by The Malaysian Insider (December, 2014), as in 2014, 51% of the Malaysian population has fell into the middle class group, where parents are having higher income, higher skilled jobs and providing better education experiences for their children. Having mothers to be in

the workforce due to family improvement and fulfilling the family needs and interest has contributed to the changes of roles and responsibilities of the abode in the home. These changes do not only affect the mothers, but also the child himself (Bronfenbrenner, 1979). To make the new family system works, parents started to look for child care alternatives. Gradually, the demand of early education and childcare services has increased. With the availability of these child care facilities, children were sent to the nursery and preschools at a very young age and unintentionally forcing them to be in a community system within the nursery and/or preschool environment. To date, the Ministry of Education has provided 8671 preschool classrooms, KEMAS with 10966 preschool centers, JPNIN with 1731 preschool centers and 7723 privately owned preschool centers. Looking at the context of preschools in the urban and sub-urban area, the number of the privately owned preschool centers has escalated to 200% from year 2000 to 2012 (EPRD, 2012) due to the demand of the family needs and preferences on their child's early education. In Kuala Lumpur specifically, most of the private preschool premises are located at the residential area. 65% of these preschools are located at the double storey residential building, 21% at the single storey residential building, 4% in the institutional building, 3% in the apartment, 3% at the commercial building and 4% are located at other places then the ones indicated (Salleh, et al. 2013). Figure 1.1 illustrates the percentage of the private preschool premises in Kuala Lumpur.

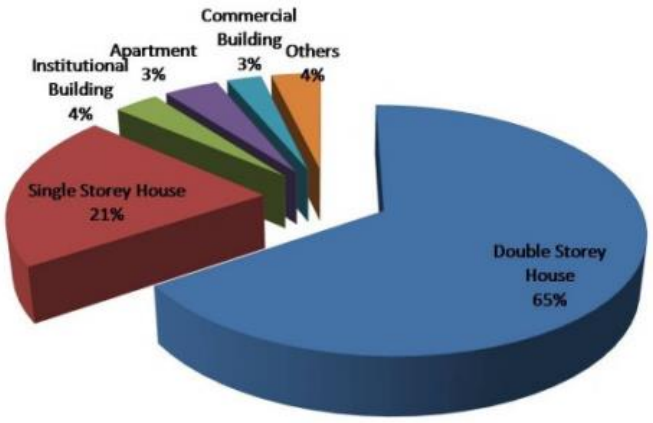

Figure 1.1 Type of private preschool premises in Kuala Lumpur

The high percentage of preschool premises located at the residential building is due to its location, that is within the family residence area. With the establishment of the Malaysia Nursery and Preschool Establishment Guideline, 2012), the government has encouraged operators to set up at least a preschool and child care

facility in every 200 residential building. This is to provide families with young children early education and child care services who are residing within the allocated perimeters (Malaysia Nursery and Preschool Establishment Guidelines, 2012). These centers are home-like, where it duplicates the residential architectural design within the area. Indirectly, the center is not only located near the family residence, but provide the child with a home-like atmosphere (Moore, 2002). With careful planning on the physical environment, it will not only offer children with a child friendly atmosphere (Moore, 2002) but it could also provide children with a sense of identification (Stankovic, 2008) and familiarity. However, from the percentage in Figure 1.1, it shows that most of the operators are more interested in operating a preschool at the double storey residential building compared to the single storey residential building. This is because the double storey residential building has more space and thus can accommodate higher number of children at one time. Based on a study by Zainol and Sahimi (2014), the average number of children that is enrolled in a preschool at the residential area is approximately 70 for it to sustain. Thus, to accommodate such number of children within a residential building, the selection to operate a preschool at the double storey residential building has been the main selection for the operators. Thus, it would be necessary to investigate further how this premis could offer children a condusive learning environment as the premis is the main selection for preschool operators.

The conversion of the residential building into an institution however, require detail and careful planning considerations. Spaces that are initially designed to fit the function of family routine and daily activities (London Borough of Lambeth Unitary Development Plan, 2008; Malaysia Ministry of Housing and Local Government, 2002) need to be changed into learning spaces, play areas, staff room and dining area and able to accommodate an adequate number of children in a space at a time. This consideration is important to support multiple teaching pedagogies and learning programs (Kuuskorpi, et al., 2011) and to encourage children to make choices, discoveries and developing various skills (Moore, 2002). Thus, to make teaching and learning more effective, suitable classroom settings need to be planned to suite to the residential physical structure. However, having a good preschool physical environment is not enough to support the child's

development. It is equally important to provide children with a preschool system that could offer a community of caring people, that promote strong families engagement, and connects the child with his world and the larger community (Greenman, 2001, 2003). Only when such environment is presented, the child will be able to feel safe and emotionally stable, which then allowing them to develop relationships with others and gradually becoming active learners. In other words, a holistic view of the preschool need to be understand, for adults to support children's development by providing them a place where they can feel at home and belonged. Over time, the child has to adapt to the brand new system in fulfilling the family needs and demands which could influence the child's development as described in the Bronfenbrenner bioecological model (Figure 1.1).

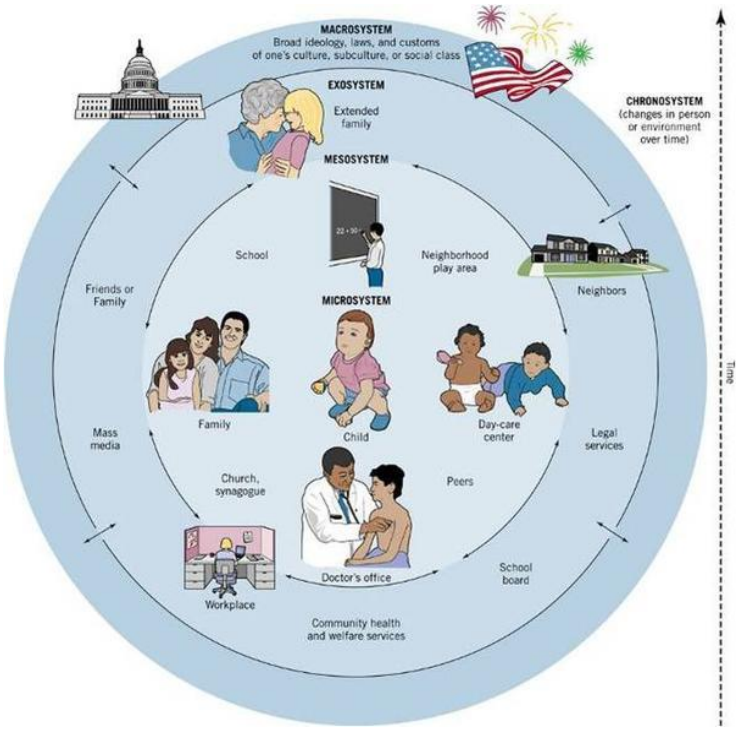

Figure 1.2 Bronfenbrenner bioecological model (1979)

The Bronfenbrenner bioecological model provides the understanding of the elements within the social system that could influence the child's development (Bronfenbrenner and Morris, 1998) through experiences and interactions with people and places that happens around him. Here, the context of people and places that was described are those which the child interacts regularly, like the home, school, parents and their siblings as well as those that he has never been or interact

before, like the parents workplace (Bronfenbrenner, 1979). These elements of social interaction could influence the child's development, either immediately or over a period of time, which could further shape the child's behaviour within himself and towards the social environment (Bronfenbrenner and Evans, 2000). To understand how the changes could affect the child, Bronfenbrenner (1979) has described the bioecological model of human development which consists of a series of nested and interconnected structures of social systems. It consists of the child at the heart of the nest, moving outwards; the micro-, meso-, exo- and macro- system. The chronosystem which is part of the social system is not nested, but runs across it. Each nest has its own elements that could change and/or affect the other elements in the inner nest of the model, which eventually will reach the child (Bronfenbrenner, 1989). Looking at the bioecological model (Figure 1.1), it can be explained how changes in the family system could affect the child. In the case of working mothers, work demands and office schedules will influence mothers to look for childcare while she is at work. Thus, the child will no longer be staying at home, but placed in a new environment for a period of time. The child will need to adapt to the new environment and the new system which will affect their development (Berk, 2013). For a child, time and interaction with the people and environment are the important elements for them to be able to adjust, adapt and accept the new system (Bronfenbrenner, 1989). Besides the family system, the Bronfenbrenner bioecological model should also be applied to the context of the preschool system. This is because, the preschool itself contains a set of its own social system where children interacts with the people and the environment within. By applying the model to the preschool context, it will provide the understanding on how the social system between people and environment in the preschool at the residential building are nested and interconnected. Besides, these understanding are important as it could contribute to the designing process of a preschool setting. Looking on the classroom entity, where children spend time the most when in school (Bergin and Bergin, 2012), by understanding how, with whom and where children interacts frequently, it could contribute to the process of designing classrooms suitable for young children. However, it is believed that this process would be more meaningful when both educators and designers could work together (Ghaziani, 2012) to meet a certain standard (Moore, 2007) and for it to be suitable to the children (Higgins et al. , 2005). Thus this study is to see how in the context of

education, by understanding the attributes of interaction within the preschool social system could influence the selection of the elements of classroom settings. In the other hand, in the context of architecture, how does the elements in the classroom setting could foster interaction between children and the environment within the attributes of interaction of the social system in the Bronfenbrenner bioecological model in the preschool context to develop children's sense of acceptance to the preschool.

1.3 Context

The context of this study is among preschool children and the preschool community located in a preschool center at the terrace house residential building.

1.4 Research Aim

The aim of this study is to investigate children's acceptance to the preschool with a possibility to develop a sense of belongingness through classroom settings by revisiting the Bronfenbrenner bioecological model.

1.5 Research Objectives

To achieve the aim, the following research objectives are formulated:

RO1: To identify the important attributes of interaction among children in developing a sense of acceptance to the preschool,

RO2:To identify the gaps between teachers and children when making classroom setting, and

RO3:To propose possible classroom settings suitable for preschools located in the double storey residential building.

1.6 Research Questions

The research questions dealt here are:

1. What are the attributes at the preschool that would make children feel comfortable and accepted?

2. What are the children's and teachers perceptions, interests and concerns when re-arranging the learning spaces in the classroom?

3. What are the suitable settings in a preschool that could offer children a conducive learning environment with a sense of belongingness to the learning space?

1.7 Significance of Study

The study is significant in order to response to the problem statement and research gap that has been mentioned earlier in the research proposal:

1. The study will provide teachers and preschool operators' ideas and setting consideration when preparing learning spaces in the classroom that is suitable for the children.

2. The study will add to the existing Malaysian Preschool Establishment guidelines to help preschool operators to make classroom settings and to create a home-like learning environment for the children using the Bronfenbrenner formula of development within the preschool bioecological context.

1.8 Research Problem

The preschools at the double storey residential building can be viewed as a place personalized for children and families, as it has the imagery of the child's own house, that offer the same residential community and if carefully designed and planned, it could be a child's second home. Looking specifically at the converted residential building, children's learning spaces are not only limited to the classroom but learning activities can happen in each space made available and accessible. These spaces are not only delivered by the objects and materials in the environment, but its relationship with the children (Lawton, 1999). Each space will provide children a sense of understanding that the environment is available for them to explore, make new discoveries and engage in activities that they are interested to do. The beauty of the residential building converted into an institution can be seen in a study by Sahimi (2010), where every part of the building could bring excitement to the children and it could serve children as a place to hide and express their emotions. In other words, when designed carefully, the residential building can provide children with a quality learning environment, with a sense of familiarity. Although there might be a debate that the residential building could not offer sufficient amount of space to accommodate a huge number of children, unlike the specifically designed preschool building, size is not only the indicator to a quality child care and education (Nicholson, 2005). The quality of the

architecturally planned built environment (Higgins, et al., 2005) and the organization of the physical environment (Higgins, et al., 2005; Moore, 1986) also play a major contribution. As reported by Sugiyama and Moore (2005), the quality of a preschool education is its physical characteristics to address the developmental needs of the children (Philips, 1987). Thus, to support these needs providing a classroom with appropriate and suitable setting is important. Research has found that student attentiveness in classroom activities and achievement are affected by the desk setting (Higgings, et al., 2005), as it illustrate the classroom characteristics, limitations and flexibility if the curriculum (Edwards 2005).

Besides, the classroom setting is also important to facilitate and engage children in classroom activities, where it can be either territorial (space organized by individual desk ownership) or functional (space organized by a specific activity). In the residential building, classroom space is often limited, and thus, effective ergonomically designed learning spaces are important to enable activities to be conducted. Edwards (2005) reviewed four different classroom settings, which include the shoe box, L-shaped, horseshoe and the open-plan (Chapter 2, Section 2.3). These layouts were discussed to look at possibilities of classroom settings in the preschool located at the residential in conducting large group activities, small group activities as well as individual work. In addition, Moore (2002) suggested the modified open plan setting which consists of self-contained space, known as activity pockets. Regardless of the various settings proposed, it is a challenge to identify which setting is the most appropriate for a particular classroom. It is also a question of how big is too big and how small is too small of a space for children. A space that is too large could afford lots of aimless, random behaviour, reduced attention span and more adult supervision is required (Moore, 1996). On the other hand, a space that is too small could leave children with a feeling of living in a closet, with more aggressive behaviour (Moore, 1996; Maxwell, 2006) and less thoughtful when solving age appropriate tasks (Maxwell, 1996). Thus, creating a suitable classroom setting is indeed an important aspect as it could affect children learning activities and behaviour. Due to space sizes and number of children ratio, it is difficult to specify which of the above would make the most appropriate classroom setting. However, regardless how the teacher would change the physical

environment, it is important to bear in mind that each setting could affect the child's future attitude towards school.

In relation to Bronfenbrenner formula of development (1989, 2002) a child's engagement and interaction with the people and environment is important to develop their feelings and attitude towards the preschool. A preschool center that welcomes a child, where he would feel accepted and wanting to be there is important, as it could affect the child himself and his family. The preschool can be a place where he might be spending most of his time during the day, when both parents are at work. Although the preschool environment is no longer new to the children, each child will go through a process of separation and adaptation to the environment and people each day. Therefore, it would be crucial for adults to create a place where children can feel accepted and belonged. As mentioned by Stankovic (2008, p.g. 1) it is "the space in which is happy, and regrets leaving it and feels dissatisfied when it has to go". In other words, the preschool should be a place for children to remember, a place when they leave and return to fondly, including their unconscious memories of special places (Moore, 1998; Olds, 1987), and most importantly a second place where they could call "home".

1.9 Research Gap

In the current Malaysian preschool condition located at the residential building, allocation of space is always the main problem for teachers and school principles. Children are distributed into smaller groups based on their age and were located in one of the rooms available in the building. As the physical structure of the residential building is not usually available to be modified due mainly to cost restriction, and ownership of the building, in most cases, it is difficult for the principal to meet the requirement of allocating 1.4 m^2/c of space for per child (referring to the Malaysia Nursery and Preschool Establishment Guidelines, 2012) when the group of children is located in one of the smaller bedrooms in the building. This situation will then lead to a poor classroom setting, resulting in a

shoe-box environment, with limited movement, inadequate number of learning materials, which could result with a rigid curriculum.

Looking at the possibility of having more parents sending their children to the residential preschool due to their convenience, and the positive home-like environment that the building could offer, a suitable classroom setting guideline could be proposed to guide the center operators and teachers in preparing a more conducive environment for the children, without putting aside the building limitations and restrictions. However, in most cases, adults are trying their best to prepare a comfortable and engaging preschool environment but it is the children who knows their environment best; such as which spot to hide the best or which area do they really feel like home. Hence, taking into account children perspectives and preferences about their preschool environment is important for teachers to understand each child's feelings and thoughts about the environment. In the other hand, understanding adult's perspectives are equally important to fill in the gap between what adults intend to offer and how children actually feel about it. This could possibly compliment to a better classroom settings which could provide children with a more meaningful environment that offer interactive learning sessions with a potential to develop a sense of belongingness.

Although many scholars has mentioned that the development of sense of belongingess can be created when a child interacts with people and environment that welcomes her and allow her to dwell in comfortably, the use of Bronfenbrenner formula of development has never been used to explain the development of a child's sense of attachement and belongingness to a place. Even though the formula has been used in the field of child development, it could be used in the field of architecture when designing spaces for children.

1.10 Scope of Study

Participating children are those who are five and six years old, who are enrolled either in a full day or half day program at the selected preschool. The

selected preschool is located at a double storey residential building in a neighborhood in Wangsa Maju, Kuala Lumpur. This residential building has been transformed into a preschool to accommodate a substantial number of children for the institution to sustain. The study involved children's and adults, which include teachers, researcher and other staffs at a preschool center. It focuses on the interaction between people and the preschool environment both specifically in the classroom and holistically in the preschool centre.

1.11 Method

This study uses a holistic approach to understand children's and adults' interaction with each other as well as the preschool environment. It uses a sequential triangulation method where a structured process has been outlined. It involve various methods which include teacher's informal interview, authophotography, children's drawings, construction of design board and manipulation of Floor Planner. Data were analyzed for each method using the content categorization method to look for patterns and similarities of the social norms and behavior.

1.12 Thesis Structure

Chapter 1: Provide an introduction about the study, the research objectives, research questions, research aim, research gap and its significance.

Chapter 2: Explains the past and current literature on classroom settings and children's learning environment.

Chapter 3: Discusses the underpinning theories for this study which include Bronfenbrenner bioecological model, Bronfenbrenner formula of development, Vygotsky's Zone of Proximal Development and Maslow third hierarchy of needs. This chapter also explains the theoretical framework of this study which is the application of Bronfenbrenner formula of development into the preschool context to develop attachment and sense of belongingness to the preschool.

Chapter 4: Explains the methodology of this study, data collection and analysis process.

Chapter 5: Provide discussions on the results obtained from the data collected and the application of the theories discussed in Chapter 3.

Chapter 6:This chapter provides the conclusion of the findings and the achievement of the research aim of this study.

REFERENCES

Adamsons, K., O'Brien, M., Pasley, K. (2007). An ecological approach to father involvement in biological and stepfather families. *Fathering, 5*, 129-147.

Allen, K.A., & Bowels, T. (2013). The importance of belonging for adolescents in secondary school settings. *European Journal of Social & Behavioural Sciences, 10*.

Agnew, J. (2011). Space and Place. In Agnew, J. & Livingstone, D. (Eds.). *Handbook of Geographical Knowledge*. London: Sage, 2011.

Alberta Learning (2002). *Focus on inquiry: A teacher's guide to implementing inquiry-based learning.* Edmonton, Alberta: Learning and Teaching Resources Branch.

Alterator, S., & Deed, C. (2013). Teacher adaptation to open learning spaces. *Issues in Educational Research*, *23*(3), 315-330.

Anderson, T.M. (2009). *The Effects of Seating Arrangement on Student's On-Task Behavior (*Doctoral Dissertation). Retrieved from ERIC Database.

Ash, D. (2000). Setting the stage for inquiry. *Foundations, 2*, 51-62.

Australian Children's Education and Care Quality Authority (ACECQA) (2013). *Guide to the National Quality Standard*. Sydney: ACECQA.

Aydin, A. (2000). *Classroom Management* (3rd. ed.). Istanbul: Alfa Yayincilik.

Bailey, D.B. & Wolery, M. (1992). *Teaching infants and preschoolers with disabilities (2nd ed.).* New York: Merrill.

Banchi, H., & Bell, R. (2008). The many levels of inquiry. *Science and Children, 4*(2), 26-29.

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.

Barker, J., & Weller, S. (2003). "Is it fun?" Developing children centred research methods. *International Journal of Sociology and Social Policy, 23*(1/2), 33-58.

Beck, M., & Malley, J. (1998). A pedagogy of belonging. *Reclaiming Children and Youth, 7*(3), 133-137.

Bell, R., Smetana, L., & Binns, I. (2005). Simplifying inquiry instruction. *The Science Teacher, 72*(7), 30-34.

Beresford, J. (2007). Seated and Ready to Learn Creating Quality Group Learning Experiences. *CB. 5*(2).

Berk, L.E., (2013). *Child Development (9th ed)*. Pearson.

Berk, L.E., & Winsler, A. (1995). *Scaffolding children's learning: Vygotsky and early childhood education (NAEYC research into practice series, Vol. 7).* National Association for the Education of Young Children.

Berman, S. (1997). *Children's social consciousness and the development of social responsibility.* Albany: State University of New York Press.

Bennett, N. (1976). *Teaching Styles and Pupil Progress*. London, Open Books.

Bergin, C., & Bergin, D. (2009). Attachment in the classroom. *Educational Psychology Review, 21*, 141-170.

Berris, R., & Miller, E. (2011). How design of the physical environment impacts early learning: educatios and parents perspectives. *Australasian Journal of Early Childhood*, 36(4).

Berry, D., & O'Connor, E. (2010). Behavioral risk, teacher-child relationships, and social skill development across middle childhood: A child-by-environment analysis of change. *Journal of Applied Developmental Psychology, 31,* 1-14.

Blatchford, P., Baines, E., Kutnick, P., & Martin, C. (2001). Classroom contexts: Connections between class size and within class grouping. *British Journal of Educational Psychology, 71*, 283-302.

Blatchford, P., & Mortimore, P. (1994). The Issue of Class Size for Young Children in Schools: What Can We Learn From Research? *Oxford Review of Education, 20*(4), 411-428.

Bodrova, E., & Leong, D. (2007). Developing self-regulation: The Vygotskian view. *Academic Exchange Quarterly, 10*(4), 33-37.

Bowler, L., Large, A., & Nesset, V. (2005). Children and adults working together in the zone of proximal development: A concept for user-centered design. *Proceedings of Annual CAIS/ACSI conference* 2005. Retrieved from http://cais-acsi.ca/proceedings/2005/bowler_2005.pdf.

Bowler, L., Large, A., & Rejskind, G. (2001). Primary school students, information literacy and the web. *Education for Information, 19*, 201-223.

Brewer, J.A. (2006). *Introduction to child development: Preschool through primary grades (6th ed.)*. Pearson.

Bredekamp, S. (1987). *Developmentally appropriate practices in early childhood service children from bith through age 8.* Washington, DC: National Association for the Education of Young Children.

Bredekamp, S. (1987). *Accreditation criteria and procedures.* National Academy of Early Childhood Programs. Washington, DC: National Association for the Education of Young Children.

Brogden M. (1983). Open plan primary schools: Rhetoric and reality. *School Organization*,*3*, 27-42.

Bronfenbrenner, U. (1977a). Lewian space and ecological substance. *Journal of Social Issues, 33*, 199-212.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Harvard University Press, Cambridge, Massachusetts.

Bronfenbrenner, U. (1988). Interacting systems in human development: Research paradigms, present and future. In: Bolger, N., Caspi, A., Dwney, G., Moorehouse, M. (Eds). 1998. *Persons in Context Developmental Pocesses.* Cambridge University Press, Cambridge.

Bronfenbrenner, U. (1989). Ecological systems theory. In: Vasta, R. (ed.) 1989 *Six Theories of Child Development Revised Formulations and Current Issues.* Vol. 6. JAI Press, Greenwich, Connecticut.

Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In *Development in context*, (Eds), R.H. Wozniak, & K.W. Fischer, pp 3-44. Hisale, NJ: Erlbaum.

Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T.N. Postlethwaite (Eds.), *International Encyclopedia of Education* (2nd ed., Vol 3, pp. 1643-1647). Oxford, EnglandL Pergamon Press / Elsevier Science.

Bronfenbrenner, U. (1995). The bioecological model from a life course perspective: reflections of a participant observer, in P. Moen, G.H. Elder, Jr. and K. Luscher (eds). *Examining Lives in Context*. Washington, DC: American Psychological Association, pp. 599-618.

Bronfenbrenner, U. (2002). *Ecological system theory*. In R. Vasta (Ed.) Six theories of child development: Revised Formulations and Current Issues. London. Jessica Kangsley Publishers.

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage Publications.

Bronfenbrenner, U., & Ceci, S.J. (1993). Heredity, environment, and the question "how?": A new theoretical perspective for the 1990s. In: Plomin, R., McClearn, G.E. (eds.) 1993. *Nature, Nurture and Psychology*. APA Books, Washington, D.C.

Bronfenbrenner, U., & Evans, G.W. (2000). Developmental science in the 21st century: Emerging questions, theoretical models, research designs, and empirical findings. *Social Development, 9*(1), 15-25.

Bronfenbrenner, U., & Morris, P.A. (1998). The ecology of developmental processes. In W. Damon & R.M. Lerner (Eds). *Handbook of child psychology, Vol 1:Theoretical models of human development* (5th ed., pp. 993-1023). New York: John Wiley and Sons, Inc.

Buhler, C. (1967). Human life goals in the humanistic perspective. *Journal of Humanistic Psychology, 7*, 36-52.

Bulkeley, J., & Fabian, H. (2006). Well-being and belonging during early educational transitions. *International Journal of Transitions in Childhood, 2*. 18-31.

Bunting, A. (2004). Secondary schools designed for a purpose: but which one? *Teacher, 154*, 10-13.

Burke, C. & Grosvenor, I. (2003). *The school I'd like*. London & New York: Routledge.

Cairns, R.B., & Cairns, B.D. (1994). *Lifelines and risks: Pathways to youth in our time*. Cambridge, England: Cambridge University Press.

Camahalan, F.M.G. (2014). Recalling childhood memories: An instructional approach using grounded theory. *Journal of Instructional Pedagogies, 14*.

Campbell, D.J. (2008). Vygotsky's zone of proximal development (Episode 4). *The learning theory podcast*. Podcast retrieved from http://www.dancampbell,us/podcase.html.

Campbell, F.A., Pungello, E.P., & Miller-Johnson, S. (2002). The development of perceived scholastic competence and global self-worth in African American adolescents from low-income families: The roles of family factors, early educational intervention, and academic experience. *Journal of Adolescent Research, 17*, 277-302.

Caples, S.E. (1996). Some guidelines for preschool design. *Young Children, 51*, 14-21.

Carter, M. (2007). Making your environment the third teacher. *Exchange*. July/August. p.22-26.

Ceppi, G., Zini, M., Branzi, A., Rinaldi, C., Vecchi, V., Bruner, J., Icaro, P., Sarti, A., Veca, A. (1998). *Children, spaces, relations: Metaproject for an environment for young children*. Reggio Children. Domus Academy Research Center.

Chowla, L. (1992). Childhood place attachments. In I. Altman and S.M. low (Eds.), *Place Attachment* (Human Behavior and Environment: Advances in Research and Theory Vol 12) (pp. 63-86). New York: Plenum Press.

Christmas, D., Kudzai, C., & Josiah, M. (2013). Vygotsky's zone of proximal development theory: What are its implications for mathematical teaching? *Greener Journal of Social Sciences, 3*(7), 371-377.

Cinar, I. (2010). Classroom geography: Who sit where in the traditional classooms?. *The Journal of International Social Research, 3*(10), 200-212.

Clark, A. (2005). Ways of seeing : using the Mosaic approach to listen to young children ' s perspectives, in A. Clark, A.T, Kjorholt and P. Moss (Eds.) *Beyond Listening: Children's Perspectives on Early CHildhood Services*, Bristol: Policy Press.

Clark, A. (2007). *Early childhood spaces: Involving young children and practitioners in the design process*. Working papers in Early Childhood Development. Bernard van Leer Foundation.

Clark, A., & Moss, P. (2005). *Spaces to play. More listening to young children using the Mosaic approach*. London: National Children's Bureau.

Clark, A. (2010). *Transforming children's spaces: Children's and adults' participation in designing learning environments*. London: Routledge.

Clements, D.H. (1997). Constructing constructivism. *Teaching Children Mathematic, 4*(4).

Cohen, L.M., & Gelbrich, J.A. (1999). Early childhood interests: Seeds of adult creativity. In A.S. Fishkin, B. Cramond & P. Olszewski-Kubilius (Eds.), *Invesing Creativity in Youth* (pp. 147-177). New Jersey: Hampton Press.

Colburn, A. (2000). An inquiry primer. *Science Scope, 23*, 42-44.

Comber, C., Galton, M., Hargreaves, L., & Wall, D. (2013). *Inside the Primary Classroom: 20 Years On*. Routledge: London.

Conezio, K., & French, L. (2002). Science in the preschool classroom. Capitalizing on children's fascination with the everyday world to foster language and literacy development. *Young Children, 57*(5), 12-18.

Copple, C., & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8. (3rd Ed)*. Washington, DC: NAEYC.

Cosco, N. & Moore, R. (1999). Playing in place: Why the physical environment is important in play work. Paper presented at the 14th *Play Education Annual Play and Human Development Meeting*: Theoretical Playwork, Ely, UK.

Coulton, C.J., Crampton, D.S., Irwin, M., Spilsbury, J.C., & Korbin, J.E. (2007). *Child Abuse Neglect, 33*(6).

Crafton, L.K., Brennan, M., & Silvers, P. (2007). Critical inquiry and multiliteracies in a first-grade classroom. *Language Arts, 84*(6), 510-518.

Crandall, J. (1981). *Theory and measurement of social interest.* New York: Columbia University Press.

Cresswell, T. (2009). *Place: A short introduction*. Blackwell Publishing.

Curtis, D., & Carter, M. (2003). *Designs for living and learning.* St. Paul, MN: Redleaf Press.

Curtis, D., & Carter, M. (2005). Rethinking early childhood environments to enhance learning. *Young Children, 60*(3), 34-39.

Danish Network for Children and Culture (2011). *Architecture and design for children and youth*. Copenhagen.

Davis, M., Leach, D., & Clegg, C. (2011). The physical environment of the office: Contemporary and emerging issues. *International Review of Industrial and Organizational Psychology, 26*. http://dx.doi.org/10.1002/9781119992592.ch6.

Davis, B., & Sumara, D. (2002). Constructivist discourses and the field of education: problems and possibilities. *Educational Theory, 52*(4), 409-428.

DeMarie, D. (2001). A Trip to the zoo: Children's words and photographs. *Early Childhood Research and Practice. 3*(1).

DeMArie, D. (2010). Successful versus unsuccessful schools through the eyes of children: The use of interviews, autophotography, and picture selection. *Early Childhood Research & Practice, 12*(2).

DeMarie, D. & Ethridge, E.A. (2006). Children's images of preschool: The Power of photography. *Young Children, 61*(1), 101-104. Wilson Education Abstracts.

Denton, P. (1992). Seating arrangements for better classroom management. *Adventist Education,* 29-32.

Department of Health, Social Services and Public Safety. (2012*). Child minding and day care: For children under age 12.* Available at http://www.dhsspsni.gov.uk, accessed 29.9.2014.

DeVries, R., & Kohlberg, L. (1987). *Constructivist Early Education*. NAEYC. Washington, D.C.

Douglas, D., & Gifford, R. (2001). Evaluation of the Physical Classroom by Students and Professors: A Lens Model Approach. *Educational Research*, *43*(3), pp. 295-309.

Drake, J. (2001). *Planning children's play and learning in the Foundation Stage.* London: David Fulton Publishers Ltd.

Dudek, M. (2000). *Architecture of Schools: The New Learning Environments.* Architectural Press: Boston.

Dudek, M. (2000). *Kindergarten Architecture: Space for the Imagination*. Taylor & Francis: London.

Dudek, M. (2005). *Children's Spaces: The New Learning Environments.* Architectural Press: Boston.

Dudek, M. (2012). *Spaces for Young Children: A Practical Guide to Planning, Designing and Building the Perfect Space.* National Children's Bureau.

Dyck, J. A. (1994). The case for the L-shaped classroom: Does the shape of a classroom affect the quality of the learning that goes inside it? *Principle Magazine*, November, 41-45.

Earthman, G.I. (2004). *Prioratization of 31 Criteria for School Building Adequacy*. Available at: http://www.aclu-md-org/faciltiies_report.pdf, accessed 26 August 2014.

Edgington, M. (2004). *The Foundation Stage teacher in action Teaching 3,4 and 5 –yearolds, (3rd ed.).* London: Paul Chapman Publishing Ltd.

Edwards, J. (2005). The classroom is a microcosm of the world. In *Children Spaces*, (Ed). Dudek, M. Architectural Press.

Edwards, C., Gandini, L., & Forman, G. (1998). *The Hundred Languages of Children: The Reddio Emilia Approach – Advanced Reflections*. Greenwich: Ablex Publishing.

Elder, G.H., Jr. (1996). Human lives in changing societies: Life course and developmental insights. In. R.B. Cairns, G.H. Elder, Jr., & E.J. Costello, (Eds.), *Developmental science* (pp. 31-62). New York: Cambridge University Press.

Eliason, C.F., & Jenkins, L.T. (2008). *A practical guide to early childhood curriculum*. Pearson Merril/Prentice Hall.

Ellis, J. (2005). Place and identity for children in classrooms and schools. *Journal of the Canadian Association for Curriculum Studies, 3*(2).

Evans, G. W., Kliewer, W., & Martin, J. (1991). The role of the physical environment in the health and well-being of children. In H.E., Schroeder (Ed.), *New directions in health psychology assessment*. New York: Hemisphere.

Fabian, H., & Dunlop, A.W.A. (2002). Inter-conneXions. *Early Years Matters*. Dundee: Learning and Teaching Scotland.

Fabian, H., & Dunlop, A.W.A. (2006). Outcomes of good practice in transition processes for children entering primary school. *Education for All Global Monitoring Report 2007.* Strong Foundations: Early Childhood Care and Education

Felstiner, S. (2004). Emergent Environments : Involving Children in Classroom Design, *Child Care Information Exchange*, 41–43.

Follari, L. (2011). *Foundations and best practices in early childhood education: History, theory and approaches to learning (2nd ed.)*. Pearson.

Gage, N.L. & Berliner, D.C. (1984). *Educational Psychology* (3rd Ed). Boston: Houghton-Mifflin.

Galton, M. (1990). Grouping and group-work. In *Children Spaces*, (Ed). Dudek, M. Architectural Press.

Galton, M., Hargreaves, L., Comber, C., Wall, D. & Pell, A. (1999). *Inside the primary classroom 20 years on.* London: Routledge.

Gandini, L. (1998). Education and Caring Spaces. In Edwards, C., Gandini, L., & Forman, G. *The Hundred Languages of Children*. Greenwich, CT: Ablex.

Gandini, L. (2002). The Story and Foundations of the Reggio Emilia Approach. In V.R. Fu., A.J. Stremmer, & L.T. Hill (Eds.), *Teaching and Leafning:Collaborative Exploration of the Reggio Emilia Approach*. (pp.13-21). Upper Saddle River, New Jersey: Merrill.

Gandini, l., Hill, L., Caldwell, L., & Schwall, C. (2005). The Context and Inspiration of Our Work. In L. Gandini, L. Hill, L. Caldwell, C. Schwall (Eds.), *In*

the Spirit of the Studio: Learning from the Atelier of Reggio Emillia (pp. 1-5). New York: Teachers College Press.

Ghaziani, R. (2010). School design: Researching children's views. *Childhoods Today*, *4*(1), 1-27.

Ghaziani, R. (2012). An emerging framework for school design based on children's voices. *Children, Youth and Environments*, *22*(1), 125-144.

Gifford. R. (2002). *Environmental Psychology: Principles & Practice*. Colville, WA: Optimal Books.

Glasser, W. (1990). *The quality school: Managing students without coercion*. New York, NY: Perennial Library.

Gonya, J. (n.d). Early childhood building blocks: Turning curiosity into scientific inquiry. *Ohio Resource Center for Mathematics, Science and Reading.*

Goodenow, C., & Grady, K. (1993). The relationship of school belonging and friends' values to academic motivation among urban adolescent students. *The Journal of Experimental Education, 62*, 60-71.

Gottman, J.M. (1983). How children become friends. *Monographs of the Society for Research in Child Development, 54*, 502-508.

Green, S., & Hogan, D. (Eds.) (2005). *Researching children's experience: Approaches and methods.* London, Thousand Oaks, CA and New Delhi: Sage.

Greenman, J. (1987). *Caring spaces/Learning places: Children's environments that work.* Bellevue, WA: Exchange Press.

Greenman, J. (2001). Beginnings workshop: What kind of place for child care in the 21st century? *Child Care Information Exchange*, 38-41.

Greenman, J. (2003). Are we losing our ground? *Child Care Information Exchange*, 40-42.

Greenman, J. (2006). *Caring places, learning spaces.* Redmond, WA: Exchange Press.

Greeno, J. G. (1998). The Situativity of Knowing, Learning, and Research. *American Psychological Association*. *53*(1), 5-26.

Griffin, E. (2006). *Hierarchy of needs of Abraham Maslow. In a first look at communication theory (6th ed.).* Boston: McGraw-Hill.

Hablemitoglu, S., Ozkan, Y., & Punitcuoglu, E. (2010). The assessment of the housing theory of Maslow's hierarchy of needs. *European Journal of Social Sciences, 13*(2).

Hagerty, B. M., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of belonging: a vital mental health concept. *Archives of Psychiatric Nursing*, *6*(3), 172–7. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/1622293.

Haghighi, M.M., & Jusan, M.M. (2012). Exploring students behavior on seating arrangements in learning environment: A review. *Procedia-Social and Behavioral Sciences, 36*, 287-294.

Hamlin, M. & Wisneski, D.B. (2012). Supporting the scientific thinking and inquiry of toddlers and preschoolers through play. *Young Children*, pp. 82-88.

Harkonen, U. (2007). The Bronfenbrenner ecological systems theory of human development. Published in Scientific Articles of V International Conference, *Person, Color, Nature, Music*. October 17-21, Saule, Latvia.

Hart, R. (1992). Children's participation: From tokenism to citizenship. *UNICEF International Child Development Centre*. Italy.

Hewett, V.M. (2001). Examining the Reggio Emilia Approach to Early Childhood Education. *Early Childhood Education Journal*, *29*(2), 95-100.

Heylighen, F. (1992). A cognitive-systemic reconstruction of Maslow's theory of self-actualization. *Behavioral Science, 37*, 39-58.

Higgins, S., Hall, E., Wall, K., Woolner, P., & Mccaughey, C. (2005). T*he Impact of School Environments.*Produced for the Design Council.

Hildebrand, G. (1991). T*he Wright space: the pattern & meaning in Frank Lloyd Wright's houses.* Seattle, Washington: University of Washington Press.

Horter, S., Mitchell, J., and Ouellet, J. (2014). Children and young people's participation evaluation: Understanding the impact of children and young people's participation on the children's society, our wider communities, and the children and young people we work with. *The Children's Society*, April, pp. 43.

Horwitz, R. (1979). Psychological effects of the "Open Classroom". *Review of Educational Research, 49*(1). 76-92. http://dx.doi.org/10.1177/0022487110382917.

Hunter, R. (2000). Class Size: A Critical Implosion. *Melbourne Studies in Education, 41*(1), 137-152.

Hurt, H.T., Scott, M.D., & McCroskey, J.C. (1978). *Communication in the Classroom*. Reading, Mass: Addison-Wesley Pub. Co.

Hurrelmann, K. (1988). *Social structure and personality development.* New York. Cambridge University Press.

Inan, H. Z. (2009). The Third Dimension in Preschools : Preschool Environments and Classroom Design, *Journal of Educational Studies 1*(1), 55–66.

Jackman, H., Beaver, N., & Wyatt, S. (2014). *Early education curriculum: A child's connection to the world.* Cengage Learning.

Jammer, M. (1969). *Concepts of space: History of theories of space in physics*. Harvard University Press, Cambridge.

Johnson, E.S. (2008). Ecological systems and complexity theory: Toward an alternative model of accountability in Education. *Complicity: An International Journal of Complexity and Education, 5*(1), 1-10.

Johnston, J., & Nahmad-Williams, L. (2008). *Early Childhood Studies*. Harlow: Pearson.

Jorgenson, J., & Sullivan, T. (2009). Accessing children's perspectives through participatory photo inteviews. *Forum Qualitative Social Research, 11*(1), 8. http://nbn-resolving.de/urn:nbn:de:0114-fqs100189.

Juvonen, J. (2006). Sense of belonging, social bonds, and school functioning. In Alexander, P.A. & Winne, P.H.(Eds.). *Handbook of Educational Psychology (2nd ed)*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Kamii, C., & Ewing, J.K. (1996). Basic teaching on Piaget's constructivism. *Childhood Education, 72*(5).

Karpov, Y.V., & Haywood, H.C. (1998). Two ways to elaborate Vygotsky's concept of meditation. *American Psychologist, 53*(1), 27-36.

Katz, L.G., 2000. *Engaging Children's Minds-The Project Approach*. C.T. Stamford: Ablex Publishing Co.

Katz, L.G., & Chard, S.C. (2000). *Engaging children's minds: The project approach (2nd ed.)*. Norwood, NJ. Ablex.

Kellogs, R. (1967). T*he psychology of children's art.* New York: CRM, Inc.

Kelloggs, R. (1969). *Analyzing children's art*. City, California: National Press Books.

Kenkmann, A. (2011). Adapting and designing spaces: Children and their schools. *CEPS Journal, 1*(2), 11-24.

Kermani, H., & Brenner, M.E. (2000). Maternal scaffolding in the child's zone of proximal development across tasls: Cross-cultural perspectives. *Journal of Research in Childhood Education, 15*, 30-52.

King, D. (2012). Helping children and families develop a sense of belonging. *Senses Exchange*, 57-60.

Kinoshita, I. (2007). Children's participation in Japan: An overview of municipal strategies and citizen movements. *Children, Youth and Environments*, *17*(1), 269-286.

Kjorholt, A-T. (2012. Childhood studies and the ethics of an encounter. Reflections on research with children in different cultural context. In Fossheim, H. (Ed.), *Cross-Cultural Child Research: Ethical Challenges.* OSlo: The Norwegian National Committee for Research Ethics in the Social Sciences and Humanities (NESH).

Kline, K. (1983). Space into place: Richard Fleischner. *Places*, *1*(2), 59-65.

Kluger-Bell, B. (2000). Recognizing inquiry: Comparing three hands-on teaching techniques. In Inquiry: Thoughts, views and strategies for the K-5 Classroom. *National Science Foundation*. Vol 2.

Kohn, A. (1993). Choices for children: Why and how to let students decide. *Phi Delta Kappan*, *75*, 8-20.

Kostelnik, M. J., Phipps Whiren, A., Soderman, A. K., Stein, L.C., & Gregory, K. (2002a). Influencing children's social development by structuring the physical environment. In *Guding Children's Social Development: Theory to Practice* (4th ed. pp. 255-267). New York, NY: Delmar.

Koza, W., & Smith, J. (2007). *Managing an Early Childhood Classroom*. Shell Publishing, Inc. CA.

Kozulin, A., Gindis, B., Ageyev, V., & Miller, S.M. (2003). *Vygotsky's educational theory in cultural context.* Cambridge University Press. Cape Town: South Africa.

Krishnan, V. (2010). Early child development: A conceptual model. Paper presented at the *Early Childhood Council Annual Conference 2010, "Valuing care"*. Christchurch, New Zealand, 7-9 May.

Kristoffersson, M., Gu, L., & Zhang, Y. (2013). Home school collaboration in Sweden and China. *China Education Review, 3*(3), 199-201.

Kuhn, P. (2003). Thematic drawing and focused, episodic interview upon the drawing - A method in order to approach to the children's point of view on movement, play and sports at school. *Forum: Qualitative Social Research*, *4*(1).

Kutnick, P. & Kington, A. (2005). Children's friendships and learning in school: Cognitive enhancement through social interaction? *Journal of Educational Psychology*, *75*(4), 521-538.

Kuuskorpi, M., Kaarina, & Gonzales, N.C. (2011). The future of the physical learning environment: School facilities that support the user. *CELE Exchange 2011/11*.

Laevers, F., Vandenbussche, Kog, M., & Depondt, L. (1997). *A process-oriented child monitoring system for young children.* Centre for Experiential Education: Katholieke Universiteit Leuven.

Lantolf, J.P. (2000). *Sociocultural theory and second language learning.* Oxford University Press: New York.

Lefebvre, H. (1991). *The production of space*. Oxford: Blackwell.

Legal Research Board Malaysia. (2012). *Uniform Building BY-Laws 1984*. International Law Book Services: Kuala Lumpur.

Lerner, R.M. (1982). Children and adoleschents as producers of their own development. *Developmental Review, 2*, 342-370.

Lerner, R.M. (2002). *Concepts and theories of human development (3rd ed.)*. Mahwah, NJ: Erlbaum.

Lewin, K. (1935). *A dynamic theory of personality*. New York: Wiley.

Lewthwaite, B. (2011). Applications and utility of Urie Bronfenbenner's bio-ecological theory. *Manitoba Education Research Network, 4*.

Llewellyn, D. (2007). I*nquiry within: Implementing inquiry-based science standards in grades 3-8, 2nd ed.* Thousand Oaks, CA: Corwin Press.

Lindsey, E.W. (2002). Preschool children's friendships and peer acceptance: Links to social competence. *Child Study Journal, 32*(3), 145-156.

Lippman, P. C. (2002). Understanding activity settings in relationship to the design of learning environments. *CAE Quarterly Newsletter* (October). AIA Committee on Architecture for Education.

Lippman, P.C. (2004). The L-Shaped Classroom: A Pattern for Promoting Learning. *ERIC* (October).

London Borough of Lambeth Unitary Development Plan. (2008). *Guidance and standards for housing development and house conversions (Supplementary Planning Document)*. Lambeth Planning. Retrieved November 18, 2012 from

http://www.lambeth.ov.uk/NR/rdonlyres/2A510A13-1A23-4662-832-B/3F4F03773E/0/ApprovedS106PlanningObligationsSPD.pdf.

Low, J.M., & Shironaka, W. (1995). Letting go-Allowing first graders to become autonomous readers. *Young Children*, *51*(1), 21-25.

Ludlow, S. (2012). Maximising the potential of the 'third teacher': Indoor developmental play environments: 3-8 yrs. *TEACH*, *3*(1).

MacAulay, D.J. (1990). Classroom Environment. A Literature Review. *Educational Psychology*. *10*(3), pp. 239-253.

MacCorskey, J.C., & McVetta, R.W. (1978). Classroom seating arrangements: Instructional communication theory versus student preferences. *Communication Education*, *27*, March.

Maddern, K. (2011). Seats in Groups, Columns or Rows. *Pedagogy*, *4*(6).

Majzub, R.M. (2009). *Cabaran Kualiti Pendidikan Prasekolah.* Penerbitan UKM.

Majzub, R.M. (2013). Critical Issues in Preschool Education in Malaysia. *Recent Advances in Educational Technology*. p.150-155.

Makhmalbaf, A., & Yi-Luen Do. (2007). Physical environment and creativity: Comparing children's behavior at home and at the bookstore. In *International Association of Societies of Design Research* (p. 22).

Malaguzzi, L. (1998). History, ideas, and basic philosophy: An interview with Lella Gandini. In C. Edwards, L., Gandini, & G. Forman (Eds.), *The hundred languages of children: The Reggio Emilia approach -advanced reflections* (2nd edition, pp. 49-97). Norwood, NJ: Ablex.

Malaysia Nursery and Preschool Establishment Guidelines. (2002). Department of Town and Country Planning Peninsular Malaysia, Ministry of Housing and Local Government.

Malpas, J.E. (1999). *Place and experience. A philosophical topography.* Cambridge, CUP.

Malpas, J. (2006). *Heidegger's topology: Being, place, world.* Cambridge, MA: MIT Press.

Martin, R., Sexton, C., & Franklin, T. (2005). *Teaching science for all children: An inquiry approach*. Pearson. Boston, MA.

Martinello, M.L (2000). *Pathways for Inquiry.* Thomson Learning.

Martinello, M.L. (2003). *Pathways for Inquiry* (3rd ed.). MindCatcher Press.

Marx, A., Fuhrer, U., & Hartig, T. (1999). Effects of classroom seating arrangements on children's question-asking. *Learning Environments Research*, *2*, 249-263.

Mashburn, A.J., Pianta, R.C., Hamre, B.K., Downer, J.T., Barbarin, O.A., Bryant, D., Burchinal, M., Early, D.M., & Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language and social skills. *Child Development*, *79*(3), 32-49. doi: 10.1111/j.1467-8624.2008.01154.x.

Maslow, A.H. (1943). A theory of human motivation. *Psychological Review, 50*, 370-396.

Maslow, A.H. (1970). *Psychology and teaching. Maslow, Abraham H. motivation and Personality (2nd ed.),* New York. In Harper & Row (1970), *Psychology in the schools*, *7*, 410.

Maxwell, L. (1996). Multiple effects of home and day care crowding. *Environment and Behavior, 28*, 494-511.

Maxwell, L. (2007). Competency in child care settings: The role of the physical environmnet. *Environmnet and Behavior, 39*(2), 229-245.

McGuckin, C., & Minton, S.J. (2014). From theory to practice: Two ecosystemic approaches and their applications to understanding school bullying. *Australian Journal of Guidance and Counselling, 24*(1), 36-48.

Mead, G.H. (1934). *Mind , self, and society.* Chicago: University of Chicago Press.

Mealings, K.T., Buchholz, J.M., Demuth., K., & Dillon, H. (2014). An Investigation into the Acoustics of an Open Plan Compared to Enclosed Kindergarten Classroom. *Inter.Noise*, Melbourne, Australia (16-19 November).

Meeteren, V., & Zan, B.S. (2010). Revealing the work of young engineers in early childhood education. *Early Childhood Research and Practice*.

Miller,E., & Almon, J. (2009). *Crisis in kindergarten: Why children need to play in school.*College Park, MD: Alliance for Children.

Mohd Yusoff Abbad., Mansor Othman., & Putri Zabariah (2010). Preschool children's play behavior influenced by classroom's spatial definitions? *Asian Journal of Environment-Behavior Studies, ajE-Bs, 1*(1) January, 49-66.

Mooney, A. (2007). *The effectiveness of quality improvement programmes for early childhood education and childcare*. Thoram Coram Research Unit. Institute of Education, University of London.

Moore, G.T., Burger, H. LeS., & Katz, E. (1979).Adventure playground and neighborhood play compared. In A.D. Seidel & S. Danford (Eds.), *Environmental Design: Research, Theory and Application*. Washington, DC: Environmental Design Research Association, 291-292.

Moore, G.T. (1986). Effects of the spatial defination of behavior settings on children's behavior: A quasi-experimental field study. *Journal of Environmental Psychology, 6*, 205-231.

Moore, G.T. (1987). The physical environmental and cognitive development in child care centers. In C.S. Weinstein & T.G. David (Eds.), *Spaces for Children: The Built Environmnet and Child Development*. New York: Plenum, 1987, pp.41-72 (editorial board review). Reprinted in L. Agustin (Ed.), *About Learning: A Field Guide for Museums.*Washington, DC: Association of Science-Technology Centers.

Moore, G.T. (1992). Issues of learning environments and school design. In E. Hebert & A. Meek (Eds.), *Children, Learning and School Design: A First National Invitational Conference for Architects and Educators*. Winnetka, IL: Winnetka Public Schools, 1992. pp. 42-44

Moore, G.T. (1996). How big is too big? How small is too small? *Child Care Information Exchange*, July, 21-24.

Moore, G.T. (1995). Early childhood physical environment scales for the assessment of child care centers. In J.L. Nasar, P. Grannis & K. Hanyu (Eds.), *Environmental Design Research*. Edmond, OK: Environmental Design Research Association, 1995. p. 23-27 .

Moore, G.T. (1997). The common core of a child care center. *Child Care Information Exchange*, March, *111*, 82-86.

Moore, G.T. (1998). Image and scale. *Child Care Information Exchange*, January, *119*, 24-26.

Moore, G.T. (2002). Designed environments for young children: Empirical findings and implications for planning and design. In M. Gallop & J. McCormack (Eds.), *Children, Young People and their Environments*, Dunedin, New Zealand: University of Otago, Children's Issues Centre, 2002. *5*, 53-63.

Moore, G.T., Burger, H.Les., & Katz, E. (1979). Adventure playground and neighborhood play compared. *Environmental Design: Research, Theory and Application*. Washington, DC: Environmental Design Research Association, 1979.p. 291-292 (refereed).

Moore, G.T., & Lackney, J.A. (1993). Blueprints for school success: How size and location of schools affect achievement . *Rethinking Schools*, *7*(3), 21

Moore, G.T., & Sugiyama, T. (2007). The Children's Physical Environment Rating Scale (CPERS): Reliability and validity for assessing the physical environment of early childhood educational facilities. *Children, Youth and Environments*, *17* (4), 24-53.

Moreland, J., & Cowie, B. (2005). Exploring the methods of autophotography ad photo interviews: Children taking pictures of science and technology. *Waikato Journal of Education, 11*, 73-87.

Moylan, C.A., Herrenkohl, T.I., Sousa, C., Tajima, E.A., Herremkohl, R.C., & Russo, M.J. (2010). The effects of child abuse and exposure to domestic violence on adolescent internalizing and externalizing behavior problems. *Journal of Family Violence*, *25*(1), 53-63.

Munton, T., Mooney, A., Moss., P., Petrie, P., Clark., Woolner, J., Barclay, L., Mallardo, M.R., & Barreau. (2002). *Research on ratios, group size and staff qualifications and training in early years and childcare settings.* Thomas Coram Research Unit. Institute of Education, University of London.

Mustafa, L.M., & Azman, M.N.A. (2013). Preschool education in Malaysia: Emarging trends and implications for the future. *American Journal of Economics*, *3*(6), 347-351.

Mynard, J., & Almarzouqi, I. (2006). Investigating peer tutoring. *ELT Journal*, *60*(1), 13-22.

National Council for Curriculum and Assessment. (2009). *Identity and Belonging.* The Early Childhood Curriculum Framework, Dublin.

Nicholson, E. (2005). The school building as third teacher. In *Children's Spaces*, Ed. Dudek, M. Architectural Press.

Noland, C.M. (2006). Auto-photography as research practice: Identity and self-esteem research. *Journal of Research Practice, 2*(1).

Nutbrown, C., & Abbott, L. (2001). Experiencing Reggio Emilia. In Abbott, L., & Nutbrown, C. (2001). *Experiencing Reggio Emilia: Implications for preschool provision.* Open University Press. Buckingham.

Ogu, U. & Schmidt, S.R. (2009). Investigating rocks and sand: Addressing multiple learning styles through an inquiry-based approach. *Young Children on the Web.*

Organization for Economic Co-operation and Development. (2011). Network on Early Childhood Education and Care's "*Survey for the Quality Toolbox and ECEC Portal*", June.Ostrosky, M., & Jung, E.Y. (2003). Building positive teacher-child relationship. *Center for the Social and Emotional Foundations on Early Learning.*

Olds, A. (1987). *Spaces for children: The built environment and child devlopment. (Ed.)* Weinstein, C. & David, T. New York: Plenum Press, 132.

Olds,A.R. (2000). *Child Care Design Guide.* San Francisco, CA: McGraw-Hill Education.

Olson, M.H., & Hergenhahn, B.R. (2009). *An introduction to theories of learning.* Pearson/Prentice Hall.

Olson, M.H., & Hergenhahn, B.R. (2012). *Introduction to theories of learning*. Pearson Education, Ltd. Otrar, M., Eksi, H., & Durmus, A. (2004). Physical Structure and Arrangement of the Classroom. In Musa Gursel, Hakan Sari and Bulent Dilmac (Eds.), *Classroom Management.*

Pace, D., & Price, M. (2005) Instructional techniques to facilitate inclusive education. In D. Schwartz (Ed.), *Including Children with Special Needs* (p. 115-131). Westport, CT: Greenwood Press.

Parnell, R. (2004). Soundings for architecture: An educationa; workshop for adults and young people. *Children, Youth and Environments, 14*(2), 229-41.

Patton, M.Q. (1990). *Qualitative evaluation and research methods (2nd ed.)*. SAGE Publications Inc.

Pfister, M. (1992). *The rainbow fish*. North South.

Phillips, D.A. (Ed.) (1987). *Quality in child care: What does research tell us?* Washington, DC: National Association for the Education of Young Children.

Philpott, P. (1993). Seating Patterns in Small Language Classes: An Example of Action Research. *Academic Search Premier*, *19*(2).

Piaget, J. (1926). *The language and thought of the child.* New York: Harcourt Brace & Company.

Piaget, J. (1964). *Development and learning.* In *Piaget Rediscovered*, edited by

Piaget, J. (1969). *The psychology of the child*. New York: Basic Books.

Piaget, J. (1975). *The origin of the idea of chance in children.* London: Routledge and Kegan Paul Ltd.

Piaget, J., & Inhelder, B. (1969). *The psychology of the child.* New York: Basic Books.

Piaget, J., Inhelder, B. & Szeminska, A. (1960). *The child's conception of geometry.* New York: Basic Books. (original work published 1948).

Porter, L. (2003). *Young children's behaviour: Practical approaches for caregivers and teachers.* (2nd ed.). London: Paul Chapman Publishing.

Prescott, E. , Jones, E., & Kritchevsky, S. (1967/1972). *Day care as a child-rearing environmnet.* Washington, DC: National Association for the Education of Young Children.

Prescott, E. (2008). The physical environment: A powerful regulator of experience. *Child Care Information Exchange, 100*, 9-15.

Quinn, M.M., Osher, D. Warger, C.L., Hanley, T.V., Bader, B.D., & Hoffman, C.C. (2000). *Teaching and working with children who have emotional and behavioral challenges.* Longmont, CO: Sopris West.

Raines, S. (1997). Developmental appropriatness: Curriculum revisited and challenged. In J. Isenberg & M.R. Jalongo (Eds.), *Major trends and issues in early childhood education*, 75-89. New York: Teachers College Press.

Rasmussen, K. (2004). Places for children-children's places. *Childhood, 11*, 55-173.

Riggins-Caspers, K.M., Cadoret, R.J., Knutson, J. F., & Langbehn. D. (2003). Biology-environment interaction and evocative biology-environmnet correlation: Contributions of harsh discipline and parental psychopathology to problem adolescent behaviors. *Behavior Genetics,33*, 205-220.

Robertson, J. (2006). *A genealogy of community living: CHanging landscapes, fortifying families, and creating community schools.* Unpublished masters' thesis, McGill Unievrsity, Montreal, Quebec, Canada.

Roopnarine, J.L., & Johnson, J.E. (2013). *Approaches to early childhood education*. Boston, Ma: Pearson.

Russ, S. W., & Dillon, J.A. (2011). Changes in children's preten play over two decades. *CReativity Research Journal, 23*(3), 30-38.

Russell, J.A. (2003). Core Affect and the Psychological Construction of Emotion. *Psychological Review, 110*, 145-172.

Saarinen, P., Ruoppila, I., & Korkiakangas, M. (1994). *Problems in educational psychology*. University of Helsinki: Lahti's Centrum of Education and Research.

Sahimi, N. N. (2010). Preschool children preferences on the school environmnet. *Asian Journal of Environment-Behavior Studies, 1*(3).

Sahimi, N.N., & Ismail Said. (2012). Young children selections of the physical elements in the preschool environment. *Journal of Asian Behavioral Studies, 1*(2).

Sahin, B.E., & Dostoglu, N.T. (2012). The importance of preschoolers' experience in kindergarten design. *METU Journal of the Faculty of Architectire*, *29*(1), 301-320.

Saltiel, E. (2006). *Methodological guide: Inquiry-based science education. Applying it in the clasroom.* Pollen Project.

Sanoff, H. (1992). *School Design*. New York: Van Nostrand Reinhold.

Sarkar, J., & Mendoza, B. (2005). Bolivia's children's parliament: Bringing participation to the national stage. *Children, Youth and Environments, 15*)2, 227-244.

Schanzenbach, D.W. (2014). Does Class Size Matter? In D. Weitzman (Ed.) *Policy Briefs*, National Education Policy Center, School of Education, University of Colorado, Boulder.

Schifter, D. (Ed.) (1996a). *What's happening in math class: Envisioning new practices through teacher narratives.* Vol 1. New York: Teachers College Press.

Schneider, M. (2002). *Do School Facilities Affect Academic Outcomes?* National Clearinghouse for Educational Facilities, available at http://www.edfacilities.org/pubs/outcomes.pdf, accessed 26.8.2014.

Schuh, K.L. (2003). Knowledge construction in the learner-centred classroom. *Journal of Educational Psychology, 95*92), 426-442.

Sebba, R. (1991). The landscape of childhood - the reflection of childhood's environment in adult memories and in children's attitudes. *Environment and Behavior, 23*(4), 395-422.

Shabani, K., Khatib, M., & Ebadi, S. (2010). Vygotsky's zone of proximal development: Instructional implications and teachers' professional development. *English Language Teaching, 3*(4), 237-248.

Shield, B., Greenland, E., & Dockrell, J. (2010). Noise in Open Plan Classrooms in Primary Schools: A Review. *Noise & Health*, *12*(49), pp. 225-234.

Simmons, K., Carpenter, L., Crenshaw, S., & Hinton, V.M. (2015). Exploration of classroom seating arrangement and student behavior in a second grade classroom. *Georgia Educational Researcher, 12*(1). 51-68.

Simon, F. (2010). *Spider School.* Orian Children's Book.

Simpson, T. L. (2002). Dare i oppose constructivist theory? *The Educational Forum, 66*, 347-354.

Skiveness, Marit and Astrid Strandbu. (2006). A child perspective and children's participation. *Children, Youth and Environments*, *16*(2), 10-27.

Sommer, R. (1969). *Personal Space*. Englewood Cliffs, N.J.: Prentice Hall Inc.

Stankovic, D. (2008). Space in the function of psychological stability of a child. *Facta Universitatis - Series: Architecture and Civil Engineering*, *6*(2), 229–233. doi:10.2298/FUACE0802229S

Stankovic, D., Milojkovic, A., & Tanie, M. (2006). Physical environmnet factors and their impact on the cognitive process and social behavior of children in the preschool facilties. *FACTA Universitas: Architecture and Civil Engineering*, *4*(1), 51-57.

Stonehouse, A. (2011). The 'third teacher' : Creating child friendly learning spaces. *Putting Children First*, magazine of the National Childcare Accreditation Council (NCAC), *38* (June), 12-14.

Strong-Wilson, T. & Ellis, J. (2007). Children and Place: Reggio Emilia's Environmnet As Third Teacher. *Theory Into Practice, 46*(1), 40-47.

Sugiyama, T., & Moore, G.T. (2005). Content and construct validity of the early childhood physical environment rating scale (ECPERS). *Design for Diversity: Proceedings of the 36th Annual Conference of the Environmental Design Research Association.* Edmond, OK: Environmental Design Research Association, 2005, 32-37.

Swim, T.J. (2014). *Infants and toddlers: Curriculum and teaching (8th ed.)*. Belmont CA: Cengage Learning.

Tardieu, L. (2006). Contemporary architecture with children. In *Playce: Archtecture Education for Children and Young People*, Alvar Aalto Academy, Arts Council of Helsinki Metropolitan Region.

Tarini, E., & White, L. (1998). Looking in the mirror. In Edwards,C., Gandini, L., & Forman, G. (Eds.), *The hundred languages of children: The Reggio Emilia approach - Advanced reflections* (2nd ed., pp. 375-404). Westport, CT: Ablex.

Taylor, A., & Vlastos. (2009). *Linking architecture and education: Sustainable design for learning environments*. Albuquerque: University of New Mexico Press.

Teets, S. (1985) Modification of play behaviors of preschool children through manipulation of environmental variables. In J. L. Frost & S. Sunderline (Eds.), *When*

children play (pp.265-272). Wehaton, MD: Association for Childhood Education International.

Temple, P. (2007). *Learning spaces for the 21st century: A review of the literature*. London: Centre for Higher Education Studies, Institute of Education, University of London.

Tharp, R.G., & Gallimore, R. (1997). *Rousing minds to life: Teaching and learning in context.* New York: Cambridge University Press.

The California Child Care Health Program. (2007). *Health and safety in the child care setting: Prevention of injuries. A Curriculum for the training of child cae providers. Module 2 (2nd ed.)*. The California Department of Education, Child Development Division.

The Commission for Architecture and the Built Environment. (2004). *Involving young people in the design and care of urban spaces.* London: CABE Space & CABE Education. The Library Association (2000). Primary School Library Guidelines. London: The Library Association.

Tobach, E. (1981). Evolutionary aspects of the activity of the organism and its development. In. R.M. Lerner & N.A. Busch-Rossnagel (Eds.), *Individuals as producers of their development: A life-span perspective*, (pp.37-68). New York: McGraw-Hill.

Touhill, L. (2012). *Inquiry-based learning*. National Quality Standard. Sydney. ACECQA.

Trawick-Smith, J. (1992). The classroom environment affects children's play and development. *Dimensions*. Winter. 27-31.

Trickett, P.K., Noll, J.G., Reiffman, A., & Putnam, F.W. (2001). Variants of intrafamilial sexual abuse experience: Implications for short- and long-term developmnet. *Development and Psychopathology, 13*, 1001-1019.

Tuan, Y-F. (1974). Space and place: Humanistic perspective. *Progress in Geography 6*, 211-52.

Tudge, J.R.H., Odero, D.A., Hogan, D.M., & Etz, K.E. (2003). Relations between the everyday activities of preschoolers and their teachers' perceptions of their competence in the first years of school. *Early Childhood Researh Quarterly, 18*, 42-64.

Tutkun, O.F. (2002). Classroom Setting Arrangement. In Zeki Kaya (Ed). *Classroom Management*.

de Valk, L., Bekker, T., & Eggen, B. (2015). Designing for social interaction in open-ended play environments. *International Journal of Design, 9*(1), 107-120.

Valsiner, J. 91987). *Culture and the development of children's action*. Chicherster: John Wiley & Sons.

Vecchi, V. (2004). The multiple fonts of knowledge. *Children in Europe*, 18-21.

Vecchi, V. (2010). *Art and creativity in Reggio Emilia: Exploring the role and potential of ateliers in early chldhood education*. London, New York: Routledge.

Ventegodt, S., Merrick, J., & Andersen, N.J. (2003). Quality of life theory III. Maslow revisited. *The Scientific World Journal, 3*, 1050-1057.

Visser, J. (2001). Aspects of physical provision for pupils with emotional and behavioral difficulties. *Support for Learning, 16*(2), 64-68.

Vygotsky, L.S. (1967). Play and its role in the mental development of the child. *Soviet Psychology, 5*, 6-18.

Vygotsky, L. S. (1978). *Mind in society*. Havard University Press. Cambridge, MA.

Vygotsky, L.S. (1981). *The genesis of higher mental functions.* In J.V. Wertsch (Eds.) The concept of activity in soviet psychology, New York: M.E. Sharpe, 144-188.

Vygotsky, L. S. (1987). Thinking and speech (N.Minick, Trans.). In R.W. Rieber & A.S. Carton (Eds.), *The collected works of L.S. Vygotsky: Vol 1. Problems of general pschology* (pp 39-285). New York: Plenum Press. (Original work published 1934).

Vygotsky, L.S. (1998b). The problem of age (M.Hall, Trans.), In R.W. Rieber (Eds.), *The collected works of l.S. Vygotsky: Vol 5. Child Psychology*, pp 187-205. New York: Plennum Press. (Original work written 1933-1934).

Vygotsky, L.S., & Luria, A. (1994). *Tool and symbol in child development*. In R. van der Veer & J. Valsiner (Eds.) The Vygotsky Reader. Oxford: Blackwell, 99-174.

Wannarka, R., & Ruhl, K (2008). Seating Arrangements that Promote Positive Academic and Behavioral Outcomes: A Review of Empirical Research. *Support for Learning, 23*(2), pp. 89-93.

Weinstein, C.S. (1979). The physical environment of the school: A review of the research. *Review of Educational Research, 49*(4), 577-610.

Wenning, C.J. (2011). Levels of inquiry model of science teaching: Learning sequences to lesson plans. *Journal of Phys. Teacher Education Online, 6*(2), 17-20.

Whitin, D.J., & Whitin, P.E. (1996). Inquiry at the window: The year of the birds. *Language Arts, 73*(2), 82-87.

Whyte, J. (2006). *Children's research centre- Ethical guidelines.* Children's Research Centre. Trinity College. Dublin.

Wiles, R., Crow, G., Heath, S., & Charles, V. (2006). Anonymity and Confidentiality. ESRC National Centre for Research Methods. *NCRM Working Paper Series, 2*(6).

Winegar, L.T. (1992). *Children's development within social context: Metatheory and theory (Volume 1).* Lawrence Erlbaum Asociates. New Jersey.

Wood, D., & Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Child Psychiatry, 17,* 89-100.

Woodhead, M. (1998). Children's perspectives on their working lives - A participatory study in Bangladesh, Ethiopia, the Phillippines, Guatemala, El Salvador and Nicaragua, Stockholm: Radda Barnen.

Woodhead, M. (1999). 'Listening to what the children say', *Childhood, 6*(1).

Woodhead, M., & Brooker, L. (2008). A sense of beloning. *Early Childhood Matters. 111,* 3-17. The Hague, The Netherlands: Bernard van Leer Foundation.

Woolner, P. (2010). *The design of learning spaces*. Continuum International Publishing Group. London.

Woolner, P., Wall, E., Wall, K., & Dennison, D. (2007b). Getting together to improve the school environmnet: User consultation, participatory design and student voice. *Improving Schools, 10,* 233-248.

Worth, K. (2010). Science in early childhood classrooms: Content and process. *ECRP* (Collected papers from STEM in Early Education and Development conference).

Worth, K., & Grollman, S. (2003). Wo*rms, shadows, and whirlpools: Science in the eary childhood classroom.* Portsmouth, NH: Helnemann.

Worth, K., & Duque, M. & Saltiel, E. (2009). *Designing and implementing inquiry-based science units for primary education.* Montrouge, France: La main a la pate.

Yaginasawa, K. (2007). School planning and design with children's participation: A case study of Simoyama elementary school. *Children, Youth and Environments, 17*(1), 315-21.

Zainol, S., & Sahimi, N.N. (2015). Classroom settings in preschools Malaysia. *Article submitted to Journal of Social Sciences.*

Zan, B.S., & Escalada, L. T. (2011). Ramps and pathways: Evalation of an inquiry-based approach to engaging young children in physical science. Presented at the *American Educational Research Association*, April. New Orleans.

Zion, M., & Mendelovici, R. (2012). Moving from structured to open inquiry: CHallenges and limits. *International Council of Associations for Science Learning. 23*(4), 383-399.

Zyngier, D. (2014). Class Size and academic Results, with a Focus on Children from Culturally, Linguistically and Economically Disfranchised Communities. *Evidence Base*, *1*.